

DTC	AUTO,FACE	ROOM TEMPERATURE SENSOR CIRCUIT
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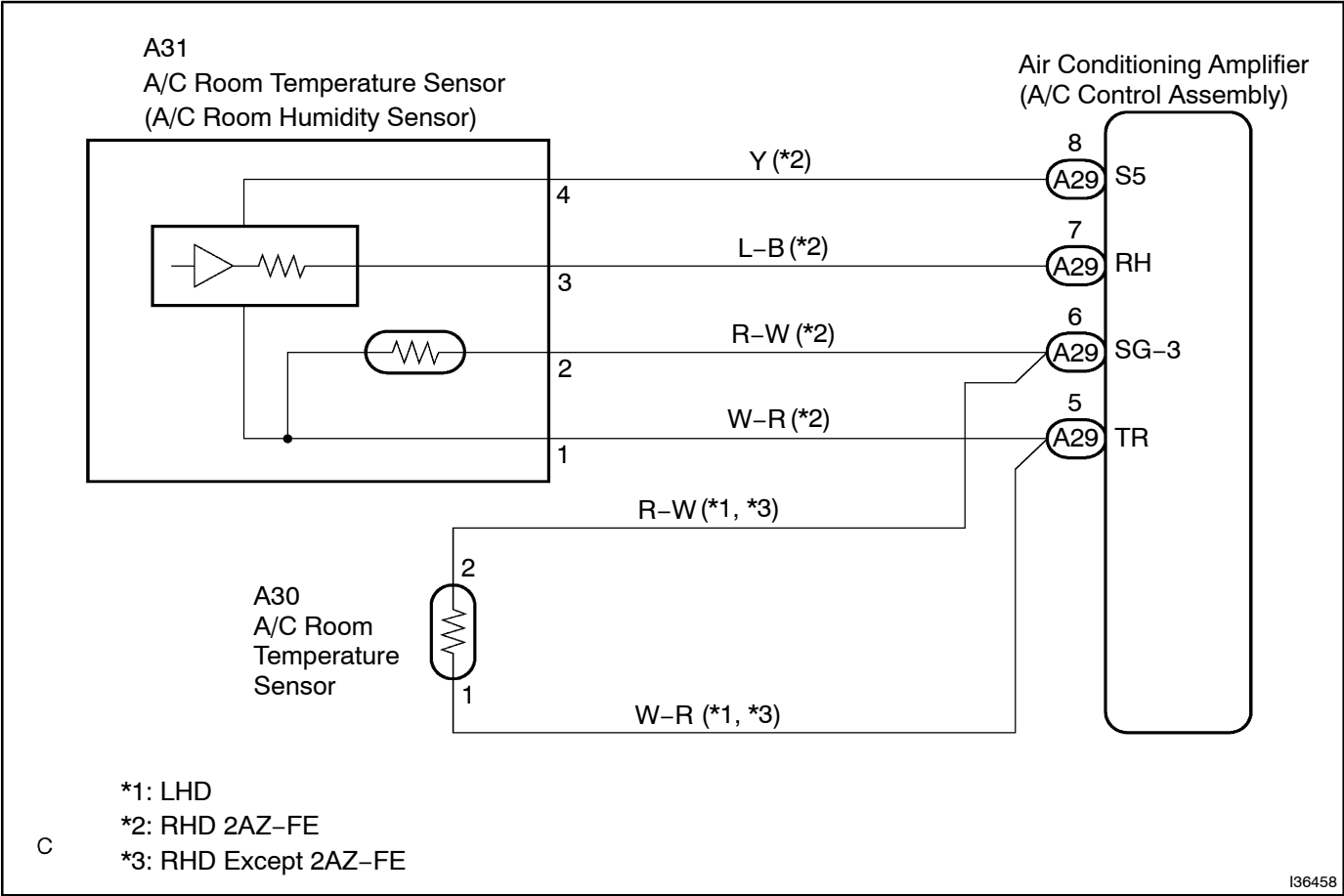
CIRCUIT DESCRIPTION

The A/C room temperature sensor is installed in the instrument panel to detect the room temperature and control the heater and air conditioner "AUTO" function. The resistance of the A/C room temperature sensor changes in accordance with the room temperature. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The A/C amplifier applies voltage (5 V) to the A/C room temperature sensor and reads voltage changes as the resistance of the A/C room temperature sensor changes. This sensor also sends appropriate signals to the A/C amplifier. The room temperature sensor is integrated with the room humidity sensor (2AZ-FE models).

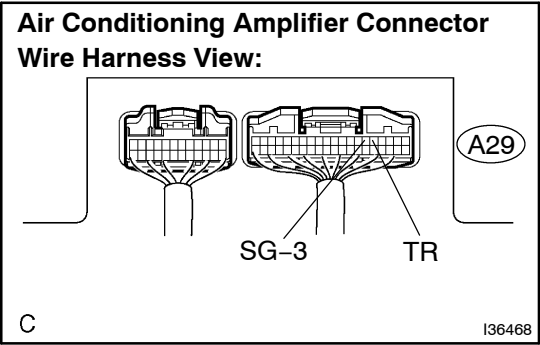
DTC No.	Detection item	Trouble Area
AUTO, FACE	Open or short in room temperature sensor circuit	<ul style="list-style-type: none">• A/C room temperature sensor• Harness or connector between A/C room temperature sensor and A/C amplifier• A/C amplifier

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT AIR CONDITIONING AMPLIFIER(TR - SG-3)



- (a) Remove the A/C amplifier with the connectors still connected.
- (b) Turn the ignition switch to the ON position.
- (c) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A29-5 (TR) - A29-6 (SG-3)	Ignition switch ON at 25°C (77°F)	1.8 to 2.2 V
A29-5 (TR) - A29-6 (SG-3)	Ignition switch ON at 40°C (104°F)	1.2 to 1.6 V

HINT:
As the temperature increases, the voltage decreases.

Result:

NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

B

PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE
(SEE PAGE 05-862)

C

REPLACE AIR CONDITIONING AMPLIFIER
(SEE PUB. NO. RM864E ON PAGE 55-96)

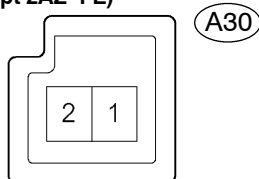
A

2 INSPECT A/C ROOM TEMPERATURE SENSOR

A/C Room Temperature Sensor

Connector Front View:

(LHD, RHD Except 2AZ-FE)



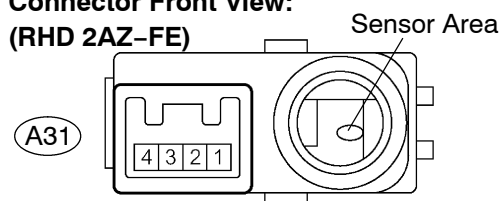
H

I30111

A/C Room Temperature Sensor

Connector Front View:

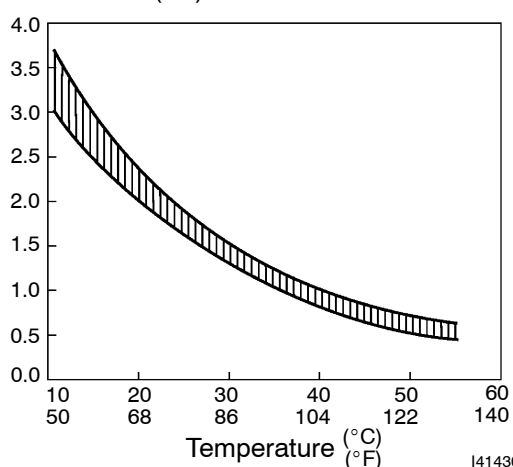
(RHD 2AZ-FE)



H

E70980

Resistance (kΩ)



I41430

- Remove the A/C room temperature sensor.
- Measure the resistance according to the value(s) in the table below.

Standard:

LHD, RHD Except 2AZ-FE:

Tester connection	Condition	Specified condition
A30-1 - A30-2	10°C (50°F)	3.00 to 3.73 kΩ
A30-1 - A30-2	15°C (59°F)	2.45 to 2.88 kΩ
A30-1 - A30-2	20°C (68°F)	1.95 to 2.30 kΩ
A30-1 - A30-2	25°C (77°F)	1.60 to 1.80 kΩ
A30-1 - A30-2	30°C (86°F)	1.28 to 1.47 kΩ
A30-1 - A30-2	35°C (95°F)	1.00 to 1.22 kΩ
A30-1 - A30-2	40°C (104°F)	0.80 to 1.00 kΩ
A30-1 - A30-2	45°C (113°F)	0.65 to 0.85 kΩ
A30-1 - A30-2	50°C (122°F)	0.50 to 0.70 kΩ
A30-1 - A30-2	55°C (131°F)	0.44 to 0.60 kΩ
A30-1 - A30-2	60°C (140°F)	0.36 to 0.50 kΩ

RHD 2AZ-FE:

Tester connection	Condition	Specified condition
A31-1 - A31-2	10°C (50°F)	3.00 to 3.73 kΩ
A31-1 - A31-2	15°C (59°F)	2.45 to 2.88 kΩ
A31-1 - A31-2	20°C (68°F)	1.95 to 2.30 kΩ
A31-1 - A31-2	25°C (77°F)	1.60 to 1.80 kΩ
A31-1 - A31-2	30°C (86°F)	1.28 to 1.47 kΩ
A31-1 - A31-2	35°C (95°F)	1.00 to 1.22 kΩ
A31-1 - A31-2	40°C (104°F)	0.80 to 1.00 kΩ
A31-1 - A31-2	45°C (113°F)	0.65 to 0.85 kΩ
A31-1 - A31-2	50°C (122°F)	0.50 to 0.70 kΩ
A31-1 - A31-2	55°C (131°F)	0.44 to 0.60 kΩ
A31-1 - A31-2	60°C (140°F)	0.36 to 0.50 kΩ

NOTICE:

- Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.
- When measuring, the sensor temperature must be the same as the ambient temperature.

HINT:

As the temperature increases, the resistance decreases (see the graph on the left).

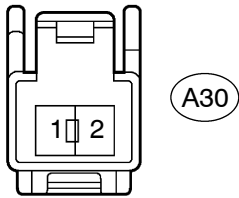
NG

REPLACE A/C ROOM TEMPERATURE SENSOR

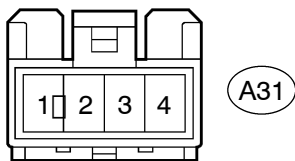
OK

3 CHECK HARNESS AND CONNECTOR (A/C ROOM TEMPERATURE SENSOR - AIR CONDITIONING AMPLIFIER) (SEE PAGE 01-32)

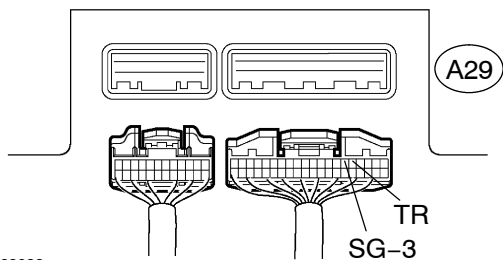
A/C Room Temperature Sensor
Connector Front View:
(LHD, RHD Except 2AZ-FE)



A/C Room Temperature Sensor
Connector Front View:
(RHD 2AZ-FE)



Air Conditioning Amplifier Connector
Wire Harness View:



E69022
I41434
I36469

I41703

- (a) Disconnect the connectors from the A/C room temperature sensor and A/C amplifier.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

LHD, RHD Except 2AZ-FE:

Tester connection	Condition	Specified condition
A29-5 (TR) - A30-1	Always	Below 1 Ω
A29-6 (SG-3) - A30-2	Always	Below 1 Ω
A29-5 (TR) - Body ground	Always	10 k Ω or higher
A29-6 (SG-3) - Body ground	Always	10 k Ω or higher

RHD 2AZ-FE:

Tester connection	Condition	Specified condition
A29-5 (TR) - A31-1	Always	Below 1 Ω
A29-6 (SG-3) - A31-2	Always	Below 1 Ω
A29-5 (TR) - Body ground	Always	10 k Ω or higher
A29-6 (SG-3) - Body ground	Always	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER (SEE PUB. NO. RM864E ON PAGE 55-96)